

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	451	(562/33).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/15 09:04
L2	505114	calcium	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 05:48
L3	24	l1 and l2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 05:48
L4	1333628	oil	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 05:48
L5	18	l3 and l4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L6	9	US-2266325-\$.DID. OR US-2402325-\$.DID. OR US-2846466-\$.DID. OR US-2884445-\$.DID. OR US-3260670-\$.DID. OR US-3023231-\$.DID. OR US-2915517-\$.DID. OR US-3007868-\$.DID. OR US-2418894-\$.DID.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:26
L7	14	US-3719596-\$.DID. OR US-2779784-\$.DID. OR US-5804094-\$.DID. OR US-5789615-\$.DID. OR US-5578235-\$.DID. OR US-4615841-\$.DID. OR US-4279837-\$.DID. OR US-2909563-\$.DID.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:06
L8	54	"low base number"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L9	0	l1 and l8	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L10	154654	sulfonate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L11	42	l8 and l10	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:11

L12	38	I2 and I11	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:11
L13	37	I4 and I12	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:24
L14	23	I6 or I7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:27
L15	34	I13 not I14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:25
L16	3	I13 and I14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:12
L17	69231	heptane	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:54
L18	3	I14 and I17	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:30
L19	12	I15 and I17	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:50
L20	3	"2779784".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:51
L21	1	"2779784".pn.	USOCR	OR	ON	2005/08/15 08:51
L22	7	("2779784").URPN.	USPAT	OR	ON	2005/08/15 08:54
L23	9094	chloride near3 free	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:05
L24	1182	I10 and I23	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:05
L25	1	I1 and I24	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:05

L26	57	I13 or I14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:25
L27	744990	nitrogen	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:25
L28	29	I26 and I27	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:34
L29	11220	SO3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:35
L30	881	I27 and I29	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L31	298	I27 same I29	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L32	0	I1 and I31	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L33	1	I1 and I30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L34	1	("4847018").URPN.	USPAT	OR	ON	2005/08/15 09:31
L35	1	I28 and I29	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:34
L36	43105	SO2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:35
L37	1579	I27 same I36	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:37
L38	0	I1 and I37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:36

L39	0	I26 and I37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:36
L40	51728	I29 or I36	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:37
L41	4	I1 and I40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 10:19
L42	2	"diwax benzene"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 10:20

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NEWS	16	APR 28	Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAPLUS
NEWS	17	MAY 23	GBFULL enhanced with patent drawing images
NEWS	18	MAY 23	REGISTRY has been enhanced with source information from CHEMCATS
NEWS	19	JUN 06	The Analysis Edition of STN Express with Discover! (Version 8.0 for Windows) now available
NEWS	20	JUN 13	RUSSIAPAT: New full-text patent database on STN
NEWS	21	JUN 13	FRFULL enhanced with patent drawing images
NEWS	22	JUN 27	MARPAT displays enhanced with expanded G-group definitions and text labels
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NEWS	24	JUL 07	STN Patent Forums to be held in July 2005
NEWS	25	JUL 13	SCISEARCH reloaded
NEWS	26	JUL 20	Powerful new interactive analysis and visualization software, STN AnaVist, now available
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NEWS	28	AUG 11	STN AnaVist workshops to be held in North America
NEWS EXPRESS			JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005
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FILE 'HOME' ENTERED AT 09:01:35 ON 15 AUG 2005

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'CAPLUS' ENTERED AT 09:01:48 ON 15 AUG 2005

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FILE LAST UPDATED: 14 Aug 2005 (20050814/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> calcium sulfonate

730785 CALCIUM

32 CALCIUMS

730788 CALCIUM

(CALCIUM OR CALCIUMS)

55538 SULFONATE

17711 SULFONATES

64796 SULFONATE

(SULFONATE OR SULFONATES)

L1 735 CALCIUM SULFONATE

(CALCIUM(W) SULFONATE)

=> "low base number"

2304910 "LOW"

418 "LOWS"

2305188 "LOW"

("LOW" OR "LOWS")

638952 "BASE"

146578 "BASES"

728501 "BASE"

("BASE" OR "BASES")

113568 "NUMBER"

13191 "NUMBERS"
122440 "NUMBER"
("NUMBER" OR "NUMBERS")
L2 5 "LOW BASE NUMBER"
("LOW" (W) "BASE" (W) "NUMBER")

=> l1 and l2

L3 1 L1 AND L2

=> d l3

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2005:15967 CAPLUS
DN 142:97166
TI Chloride-free, low-base-number
calcium sulfonate manufacture as lubricating oil
additives
IN De Kraker, Abraham Robert; Holmes, Steven Allen; Kaushik, Krishna Rangraj
PA USA
SO U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 417,788.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005004392	A1	20050106	US 2004-824785	20040415
	US 2004210083	A1	20041021	US 2003-417788	20030417
PRAI	US 2003-417788	A2	20030417		

=> chloride(l)free

1039898 CHLORIDE
153289 CHLORIDES
1109816 CHLORIDE
(CHLORIDE OR CHLORIDES)

1206568 FREE
592 FREES
1207069 FREE
(FREE OR FREES)

L4 33995 CHLORIDE(L)FREE

=> l01 and l4

81 L01
L5 0 L01 AND L4

=> l1 and l4

L6 3 L1 AND L4

=> d l6 1-3 ti fbib abs

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
TI Chloride-free, low-base-number calcium
sulfonate manufacture as lubricating oil additives
AN 2005:15967 CAPLUS
DN 142:97166
TI Chloride-free, low-base-number calcium
sulfonate manufacture as lubricating oil additives
IN De Kraker, Abraham Robert; Holmes, Steven Allen; Kaushik, Krishna Rangraj
PA USA
SO U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 417,788.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005004392	A1	20050106	US 2004-824785	20040415
				US 2003-417788	A2 20030417
	US 2004210083	A1	20041021	US 2003-417788	20030417

PATENT FAMILY INFORMATION:

FAN 2004:878204

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004210083	A1	20041021	US 2003-417788	20030417
	WO 2004094366	A1	20041104	WO 2004-US11684	20040415
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

	US 2005004392	A1	20050106	US 2003-417788	A 20030417
				US 2004-824785	20040415
				US 2003-417788	A2 20030417

AB Low-base-number, **chloride-free calcium sulfonates**, useful as lubricating oil additives, are synthesized from a sulfonic acid solution containing a miscible solvent by: (1) removing dissolved or entrained SO₂ and SO₃, (2) adding and mixing Ca(OH)₂ at a 1-5:1 mol ratio water-sulfonic acid and 1-10:1 mol ratio Ca(OH)₂-sulfonic acid mixture, (3) heating the reaction mixture to 40-200° (4) separating excess Ca(OH)₂, (5) removing solvent to produce an intermediate concentrated product, and (6) concentrating the intermediate product. The reaction step (step 3) is carried out for ≤60 min (preferably ≤30 min), with excess Ca(OH)₂ removed by centrifugation. The product **calcium sulfonate** is recovered as an oil-soluble product with viscosity of 10-100 cSt at 100°.

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Production of **chloride-free calcium sulfonates** as lubricant and fuel additives

AN 2004:878204 CAPLUS

DN 141:352532

TI Production of **chloride-free calcium sulfonates** as lubricant and fuel additives

IN De Kraker, Abraham Robert; Holmes, Steven Allen; Kaushik, Krishna Rangraj
PA USA

SO U.S. Pat. Appl. Publ., 9 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004210083	A1	20041021	US 2003-417788	20030417
	WO 2004094366	A1	20041104	WO 2004-US11684	20040415
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,				

ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
TD, TG

US 2005004392	A1	20050106	US 2003-417788	A	20030417
			US 2004-824785		20040415
			US 2003-417788	A2	20030417

PATENT FAMILY INFORMATION:

FAN 2005:15967

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005004392	A1	20050106	US 2004-824785	20040415
				US 2003-417788	A2 20030417
AB	US 2004210083	A1	20041021	US 2003-417788	20030417
<p>Low-base-number chloride-free calcium sulfonates are prepared from a sulfonic acid feedstock solution (typically petroleum sulfonates) by adding 1-20 vols. of a miscible solvent (vs. sulfonic acid) and removing dissolved or entrained SO₂ or SO₃, (2) mixing the sulfonic acid with 1-5 mol water and 1-10 mol Ca(OH)₂ (per mole sulfonic acid), (3) heating the mixture to 40-200°, (4) separating excess Ca(OH)₂ and Ca salts, and (5) recovering solvent, oil, and chloride-free product. The additives are especially useful as lubricant and fuel additives. A preferred solvent is heptane.</p>					

L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for preparing overbased **calcium sulfonates**

AN 1990:122039 CAPLUS

DN 112:122039

TI Process for preparing overbased **calcium sulfonates**

IN Matthews, Leonard A.; Powers, William J., III; Przybyla, Henry M.;
Whittle, Joanne R.; Perciful, Jerry C.

PA Texaco Inc., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4879053	A	19891107	US 1988-217540	19880711
				US 1988-217540	19880711
AB	<p>In the preparation of an overbased Ca sulfonate from a chloride-free Ca sulfonate and Ca oxide, 0.1-1 weight% (preferably 0.4-0.9 weight%) of a promoter selected from alkali and alkaline earth halides (e.g., CaCl₂) is added to improve the overbasing reaction rate. The sulfonates are used as detergents and reserve alkalinity lubricating oil additives.</p>				

=> logoff hold

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
39.52	39.73

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
-2.19	-2.19

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